

In the Claims:

Claims 1-53 (Cancelled).

54. (Currently Amended) A pharmaceutical composition comprising:

(i) an active agent non-covalently linked ~~protected~~ in an internalized domain or pocket of an amino acid polymer wherein said amino acid polymer structure comprises at least one hydrophilic/~~polar~~ component and at least one hydrophobic/~~non-polar~~ component designed to promote the formation of said internalized domain or pocket; and

(ii) said hydrophilic/~~polar~~ component and hydrophobic/non-polar component are selected to manipulate the tertiary structure of said amino acid polymer to control degradation and release of said active agent;

wherein said hydrophilic/~~polar~~ component is lysine, arginine, asparagine, cysteine, glutamic acid or combinations thereof; ~~and~~

wherein said hydrophobic/~~non-polar~~ component is valine, tyrosine, proline, leucine, tryptophan, methionine, phenylalanine, glycine, isoleucine, benzyl glutamic acid, or combinations thereof; and

wherein said composition is in a form suitable for oral administration.

55-56. (Cancelled)

57. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer comprises at least one D-amino acid.

58. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer has a length between 5 and 400 amino acids.

59. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer is a mixture of polypeptides of varying length.

60. (Previously Presented) The pharmaceutical composition of claim 54, wherein the active agent is selected from the group consisting of a nutrient, a hormone, a neurotransmitter, and a metabolic intermediate.

61. (Previously Presented) The pharmaceutical composition of claim 54, wherein said active agent is selected from L-Dopa, 3-iodo-tyrosine, 3, 5-diiodo-tyrosine, L-thyroxine, glutamine, iodothyronine, aspirin, tryptophan and hydrocortisone.

62. (Cancelled).
63. (Previously Presented) The pharmaceutical composition of claim 62, wherein said co-polymer has a molar ratio between 3 and 4.
64. (Previously Presented) The pharmaceutical composition of claim 54, further comprising at least one excipient.
65. (Previously Presented) The pharmaceutical composition of claim 64, wherein said excipient is a filler, a pH buffer, an anti-oxidant, a disintegrant, a glidant, a lubricant, or a binder.
66. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer is selected from a glutamic acid polymer and a glutamic acid/tyrosine co-polymer.
67. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer is a co-polymer of lysine and phenylalanine and the active agent is hydrocortisone.
68. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer has a free energy of folding between about 3 kcal/mol and about 50 kcal/mol.
69. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer is formulated for release of a pharmaceutically effective amount of said active agent in the small intestine.
70. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer is formulated for release of a pharmaceutically effective amount of said active agent in the stomach.
71. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer is a co-polymer that consists essentially of glutamic acid and glutamine residues.
72. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid polymer consists essentially of Cys, Pro, Glu, and Tyr residues.
73. (Previously Presented) The composition of claim 54, wherein said amino acid polymer is selected from co-polymers of (1) glutamic acid and phenylalanine and (2) lysine and phenylalanine; and the active agent is L-DOPA.

74. (Previously Presented) The composition of claim 54, wherein said amino acid polymer is selected from co-polymers of (1) glutamic acid and phenylalanine and (2) lysine and phenylalanine; and the active agent is aspirin.

75. (Previously Presented) The pharmaceutical composition of claim 54, wherein said amino acid poly is poly-L-Lysine in helical form.

Claims 76-94. (Cancelled)

95. (Currently Amended) A pharmaceutical composition comprising:

(i) an active agent non-covalently linked ~~protected~~ in an internalized domain or pocket of an amino acid polymer wherein said amino acid polymer structure consists essentially of at least one hydrophilic/~~polar~~ component and at least one hydrophobic/~~non-polar~~ component designed to promote the formation of said internalized domain or pocket; and

(ii) said hydrophilic/~~polar~~ component and hydrophobic/~~non-polar~~ component are selected to manipulate the tertiary structure of said amino acid polymer to control degradation and release of said active agent;

wherein said hydrophilic/~~polar~~ component is lysine, arginine, asparagine, cysteine, glutamic acid or combinations thereof; ~~and~~

wherein said hydrophobic/~~non-polar~~ component is valine, tyrosine, proline, leucine, tryptophan, methionine, phenylalanine, glycine, isoleucine, benzyl glutamic acid, or combinations thereof; and

wherein said composition is in a form suitable for oral administration.

96. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of lysine and phenylalanine

97. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of lysine and tyrosine.

98. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamine and tyrosine.

99. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamine and proline.

100. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of lysine and tryptophan.
101. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamic acid and phenylalanine.
102. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamic acid and glutamine.
103. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamic acid and tyrosine.
104. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamic acid, proline and tyrosine.
105. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of glutamic acid, proline, cysteine and tyrosine.
106. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a co-polymer of arginine and at least one amino acid selected from valine, tyrosine, proline, leucine, tryptophan, methionine, phenylalanine, glycine, isoleucine, and benzyl glutamic acid.
107. (Previously Presented) The pharmaceutical composition of claim 54 or claim 95, wherein said amino acid polymer is a copolymer of arginine and glycine.